

REMARKS

Claims 1 and 3-7 continue to be pending in this patent application. Claims 7-10, drawn to a non-elected invention, stand withdrawn from further consideration.

In this paper, Applicant has amended claim 1.

PRIOR ART REJECTION I

Claims 1, 3 and 5 were rejected under 35 USC § 113(a) under 35 USC § 103(a) as being unpatentable over EP 0 679 406 A1 (Berendsen) in view of WO 00/59533 (McPhail), US 4145768 (Chevette) and US 5511570 (Noren et al.). Applicant traverses this rejection insofar as it might be deemed applicable to claims 1, 3 and 5 as now presented.

Applicants disclosed and claimed method employs a combination of steps whereby soiled items in a closed chamber are automatically cleaned, disinfected and dried without presenting a danger to operating personnel and without fouling the surroundings. The items in the chamber are disinfected by heat and then cooled and dried using air. The use of air for cooling and drying of cleaned items in the chamber reduces water consumption and prevents recontamination of the cleaned items. While the chamber door is closed, residual steam and exhaust air are conveyed via an exhaust air duct with an exhaust air valve into an outflow providing for gravity flow of liquid from a lower end of the chamber. The residual steam and exhaust air are not emitted to the ambient atmosphere but rather are introduced into the outflow at a location downstream of a siphon bend in the outflow. When the chamber door is opened for removal of the cleaned items, gases released from the chamber do not contaminate the surroundings, are relatively cool and do not present a danger to nearby personnel. Since the exhaust gases have been conveyed to the outflow from the chamber at a location downstream of the siphon bend, odorous gases that might have accumulated in the chamber are prevented from being released to the surroundings. These attributes of the disclosed and claimed method cannot be realized in known cleaning methods.

On page 4 of the Office Action, the Examiner concedes that "Berendsen '406 does not teach that the outflow is at a lower end of the chamber, from which liquid can flow by gravity; that the exhaust duct has an exhaust valve, wherein the outflow contains a siphon bend; and the exhaust duct opens into the outflow at a location downstream of the siphon bend." That is, the

Examiner acknowledges that there are at least four attributes of the method recited in claim 1 that are not met by the disclosure in Berendsen. On pages 4-7, the Examiner contends that these deficiencies in the Berendsen disclosure vis-à-vis the requirements of claim 1 can be remedied by modifications to the Berendsen method and apparatus that are made obvious by teachings in McPhail, Chevette and Noren et al.

The method and apparatus disclosed by Berendsen is specifically designed for the cleaning of small volume passages, such as those found in pneumatically powered dental tools. In the Berendsen apparatus, tubes carrying supplies of cleaning and drying agents are coupled with individual passages in the tools via couplings A₁, A₂, A₃, ... A_n in the rear wall of a bowl 7 disposed behind lid 8 of cupboard 3. In the Berendsen apparatus and method, the cleaning and drying agents undergo a forced flow through the individual passages in the tools during the cleaning process. Although the cleaning and drying agents are introduced into passages of tools disposed within a chamber in the Berendsen apparatus formed by bowl 7 and lid 8, these cleaning and drying agents are not introduced into the chamber *per se*. In Berendsen, there is no disclosure whatsoever of a gravity drain from the chamber, much less a gravity drain *and* an exhaust duct.

Applicant has carefully amended claim 1 to more clearly recite attributes of Applicant's inventive method. In amended claim 1, step a) calls for the introduction of water and auxiliary agents via spray nozzles into the entire volume of the chamber. In step c), air is forcibly introduced into the entire volume of the chamber, and in step d), exhaust air is conveyed from the entire volume of the chamber. Support for these amendments to claim 1 can be found in this application as filed in drawing figure 1 and in the specification on page , lines 11-24.

It is apparent that the Examiner has equated bowl 7 in the Berendsen apparatus with Applicant's claimed chamber. As observed above, in the Berendsen apparatus, cleaning, disinfecting and drying agents are introduced into and exhausted from discreet passages in dental tools located in the bowl. These agents are not introduced into the entire volume of the bowl, nor is the entire volume of the bowl exhausted following cleaning, disinfecting and drying of the passages in the dental tools. That is, the operation of the Berendsen apparatus differs fundamentally from the method recited in Applicant's amended claim 1.

On page 4 of the Office Action, the Examiner characterizes McPhail as teaching "a method wherein an exhaust duct contains an exhaust valve (122 of figure 8; pg 13, lines 1-5) and the exhaust valve conveys air from the device (pg 13, lines 1-5) in order to regulate the pressure in the device (pg 13, lines 1-5)" and further teaching "a method wherein an outflow contains a siphon bend (figure 8 shows several bends in the outflow after the exhaust valve)." The Examiner contends, "Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to have provided a method as claimed in view of Berendsen '406, in further view of McPhail '553, in order to regulate the pressure in the device."

The Examiner acknowledges, however, that the foregoing combination of the Berendsen and McPhail teachings "are silent as to a method wherein the outflow is at a lower end of the chamber, from which liquid can flow by gravity and wherein an exhaust duct opens into the outflow at a location downstream of a siphon bend." The Examiner then takes the teachings in McPhail a step further, contending that the "combination of Berendsen '406 and McPhail '553 could be modified such that the outflow contained a siphon bend such that the exhaust duct opened into the outflow at a location downstream of the siphon bend as a matter of a change in shape without unexpected results. Such modifications have been held within the ambit of one having ordinary skill in the art; see MPEP § 2144.04."

McPhail discloses a table-top sterilizer for medical instruments in which the instruments to be sterilized are held in a cassette 28 placed in a cavity 4 that can be sealed by a door 6. As stated in the Abstract, a steam circuit provides steam to the cassette for sterilizing the instruments. To enhance the sterilization process and reduce the time required for sterilization a vacuum generated by a two-stage vacuum pump 92 is applied to the cavity and to the cassette to withdraw air from the cavity and the cassette. In the McPhail apparatus, the pressures in the cavity, the cassette and the fluid circuits are regulated by controlling the application of vacuum. There is no mention of gravity flow in the McPhail disclosure, and there are no elements in the McPhail apparatus that are identified as, or could serve as, "siphon bends."

As noted above, the method taught by Berendsen requires a pressurized flow of cleaning and drying agents through passages in items to be cleaned. The Berendsen method could not be practiced using gravity-induced flow. There is no disclosure in Berendsen or McPhail suggesting that application of a vacuum, as taught by McPhail, would be advantageous in a method that

requires pressurized flow. There are no siphon bends whatsoever in the McPhail apparatus, much less a siphon bend that would be located, as proposed by the Examiner, in an exhaust conduit that provides for gravity flow. Applicant submits, therefore, that the modification proposed by the Examiner could not be realized using teachings in McPhail.

On pages 8-9 of the Office Action, the Examiner states, "In response to applicant's argument that Berendsen '406 and McPhail '553 cannot be physically combined, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981)."

Applicant has argued above that the combination of teachings in Berendsen and McPhail envisioned by the Examiner is not viable, and would not have been obvious. In particular, Applicant has pointed out that the Berendsen method could not be practiced using gravity-induced flow, that there are no elements in the McPhail apparatus that are identified as, or could serve as, "siphon bends," and that there is no disclosure in Berendsen or McPhail suggesting that application of a vacuum, as taught by McPhail, would be advantageous in the Berendsen method, which requires pressurized flow. *If this rejection is going to be maintained*, Applicant respectfully requests that the Examiner fully address these arguments and fully explain how the modifications proposed by the Examiner could have been suggested, to those of ordinary skill in the art, by the combined teachings of Berendsen and McPhail.

Even if the Berendsen apparatus/method were modified as proposed by the Examiner, the resulting method would still not employ agents introduced and exhausted from the entire volume of the bowl 7 and could not, therefore, meet the requirements of amended claim 1.

On page 5 of the Office Action, the Examiner concedes that Berendsen and McPhail do not provide a motivation for modifying the Berendsen apparatus "such that the outflow contained a siphon bend such that the exhaust duct opened into the outflow at a location downstream of the siphon bend."

The Examiner characterizes Chevrette as teaching "a device wherein an exhaust gas duct (tubing 27 of figure 1 ; col. 2, lines 17-26; the tube would contain air when not in use, some of

which would be forced through the tube as liquid passes) opens into an outflow (drain pipe 30 of figure 1; col. 2, lines 27-30) at a location downstream of a siphon bend (by delivery end 29, downstream of sink trap 40, shown as a siphon bend in figure 1 ; col. 2, lines 30-39) in order to provide a unified fluid outflow from the device (col. 2, lines 39-42; air in the house 26 would be forced through by passing liquids)." The Examiner contends, "Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to have provided a method wherein the outflow contains a siphon bend and the exhaust duct opens into the outflow at a location downstream of the siphon bend in the method of Berendsen '406 and McPhail '553, in further view of Chevrette '768, in order to provide a unified fluid outflow from the device."

In fact, Chevrette discloses a urinal in the form of an open-top funnel 12 with a discharge tube 26 that connects with a sink drain pipe 36 at a location downstream of sink trap (siphon bend) 40. In the operation of the Chevrette urinal, air in tube 26 would bubble up through liquid in the tube and escape through the open-top funnel 12. Air in the tube 26 would not be "forced through the tube as liquid passes," as the Examiner contends. A sink trap, or siphon bend, relies on gravity-induced flow for its operation. In the Berendsen apparatus, such a trap would be useless, since the flow of fluids is forced, not gravity-induced.

On pages 5-6 of the Office Action, the Examiner acknowledges that "The combination of Berendsen '406, McPhail '553, and Chevrette '768 is silent as to a method wherein the outflow is at a lower end of the chamber, from which liquid can flow by gravity." The Examiner cites Noren et al. for its disclosure of "a method wherein an outflow is at a lower end of the chamber, from which liquid can flow by gravity (col. 2, lines 42-44) in order to drain the chamber (col. 2, lines 42-44)." The Examiner contends, "Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to have provided a method wherein an outflow is at a lower end of the chamber, from which liquid can flow by gravity in the method of Berendsen '406, McPhail '553, and Chevrette '768, in further view of Noren '570 in order to drain the chamber."

For reasons made evident in the discussion above, the "method of Berendsen '406, McPhail '553, and Chevrette '768," as proposed by the Examiner, is not viable, much less a method made obvious by the teachings in Berendsen, McPhail and Chevrette. The teachings in

Noren et al. cannot cure the gross deficiencies in the proposed combination of Berendsen, McPhail and Chevrette vis-à-vis the requirements of Applicant's amended claim 1.

In view of the foregoing observations and arguments, Applicant submits that no reasonable combination of the disclosures in Berendsen, McPhail, Chevrette and Noren can properly serve as a basis for rejecting independent claim 1, as now presented, and dependent claims 3 and 5 under 35 USC § 103(a). Applicant therefore requests that this rejection be withdrawn.

PRIOR ART REJECTION II

Claims 4 and 6 were rejected under 35 USC § 103(a) as being unpatentable over Berendsen, McPhail, Chevrette and Noren and further in view of US 5225160 (Sanford). Applicant traverses this rejection insofar as it might be deemed applicable to claims 4 and 6 as now presented.

On page 7 of the Office Action, the Examiner acknowledges that the disclosures in Berendsen, McPhail, Chevrette and Noren et al. "do not specify the use of ambient air for the cooling of objects; rather, it specifies the use of compressed air."

The Examiner characterizes Berendsen as teaching "that flushing through air accelerates the cleaning process by discharging condensation and residual heat" and characterizes Sanford et al. as teaching "the circulation of ambient air in cooling objects after steam sterilization (col. 5, lines 3-7) as an equivalent method of accelerating the cleaning process." The Examiner contends, "it would have been obvious to one having ordinary skill in the art at the time the invention was made to circulate the ambient air of Stanford '1 60, as an alternative equivalent in the method of Berendsen '406, Chevrette '768, McPhail '553 and Noren '570 in order to accelerate the cleaning process."

Without acquiescing in the Examiner's proposal to modify the proposed Berendsen-McPhail-Chevrette-Noren et al. method to incorporate teachings from Sanford, Applicant notes that there are no teachings in Sanford that can remedy deficiencies in the Berendsen, McPhail, Chevrette and Noren et al. disclosures vis-à-vis the requirements of Applicant's amended independent claim 1, as explained above. That is, no reasonable combination of the disclosures in Berendsen, McPhail, Chevrette, Noren et al. and Sanford could yield a method that could satisfy the requirements for the method recited in dependent claims 4 and 6.

In view of the foregoing observations and arguments, Applicant submits that no reasonable combination of the disclosures in Berendsen, McPhail, Chevrette, Noren and Sanford can properly serve as a basis for rejecting claims 4 and 6, as now presented, under 35 USC § 103(a). Applicant therefore requests that this rejection be withdrawn.

CONCLUSION

In view of the amendments, observations and arguments presented herein, Applicant respectfully requests that the Examiner reconsider and withdraw the rejections stated in the outstanding Office Action and recognize all of the pending claims as allowable.

If unresolved matters remain in this application, the Examiner is invited to contact Frederick R. Handren, Reg. No. 32,874, at the telephone number provided below, so that an interview can be arranged in which these matters can be addressed and resolved expeditiously.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

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Respectfully submitted,

By


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